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January 28, 2005

Ms. Suzanne Wilson
City of Anaheim
Public Utilities Department
201 South Anaheim Blvd., Suite 601
Anaheim, California 92803

Sent via UPS

Subject: Quarterly Update Report Submittal

Dear Ms. Wilson:

On behalf of Atlantic Richfield Company, Delta Environmental Consultants, Inc. is submitting the enclosed Quarterly Update Report for the Fourth Quarter 2004. The enclosed quarterly report was prepared for the following ARCO Facility:

ARCO Facility No.	Location
3023	601 South Magnolia Avenue, Anaheim

If you have any questions regarding this project, please contact the undersigned at (949) 292-5080.

Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.

Bryan Van Wagner
Project Manager
California Registered Geologist No. 5820

REGISTERED GEOLOGIST
Bryan L. Van Wagner
No. 5820
STATE OF CALIFORNIA

Enclosure: Atlantic Richfield Company Quarterly Update Report

cc: Mr. Darrell Fah, Atlantic Richfield Company, La Palma, California
Ms. Valerie Jahn-Bull, Regional Water Quality Control Board – Santa Ana Region
Mr. Fabio Minervini, England Geosystem, Inc., Irvine, California

BVW:mjr(c:coverletters\3023.doc)

A member of:
Inogen Environmental Alliance

ATLANTIC RICHFIELD COMPANY QUARTERLY UPDATE REPORT
FOURTH QUARTER 2004
JANUARY 30, 2005

Facility No.:	3023	Address:	601 South Magnolia Avenue, Anaheim, California
Atlantic Richfield Company Environmental Business Manager / Phone No.:			Darrell Fah / (714) 378-5105
Consulting Co. / Contact Person / Phone No.:			Delta Environmental / Bryan Van Wagner / (949) 362-3077
Primary Agency / Contact Person / Regulatory ID No.:			City of Anaheim Public Utilities Department (APUD) / Suzanne Wilson
Other Agencies to Receive Copies:			California Regional Water Quality Control Board - Santa Ana / Valerie Jahn-Bull

WORK PERFORMED THIS QUARTER (Fourth - 2004):

1. Submitted the third quarter 2004 *Quarterly Update Report* to the APUD on October 30, 2004.
2. Doulos Environmental conducted quarterly groundwater monitoring and purge sampling on November 5, 2004 (field data sheets are included as Attachment A). All groundwater samples were analyzed for total petroleum hydrocarbons as gasoline according to Environmental Protection Agency (EPA) Method 8015B and for benzene, toluene, ethylbenzene, xylenes, methyl tertiary butyl ether, di-isopropyl ether, ethyl tertiary butyl ether, tertiary amyl methyl ether, tertiary butanol, and ethanol according to EPA Method 8260B. Historical groundwater elevation and analytical data are presented in Tables 1 and 2, respectively. A copy of the laboratory analytical report and chain-of-custody documentation are included as Attachment B.

WORK PROPOSED FOR THE NEXT QUARTER (First - 2005):

1. Submit the fourth quarter 2004 *Quarterly Update Report* to the APUD by January 30, 2005.
2. Conduct quarterly groundwater monitoring and sampling activities.
3. Submit information regarding the removal of MTBE during previous soil vapor extraction activities.

Current Phase of Project:	Post-Remedial Groundwater Monitoring/Closure Request Pending APUD Approval
Frequency of Sampling:	Groundwater – Quarterly
Frequency of Monitoring:	Groundwater – Quarterly
Permits for Discharge (No.):	None
Approximate Depth to Groundwater:	36.5 – 39.9 feet Measured X Estimated
Groundwater Gradient:	0.05 ft/ft (Magnitude) North (Direction)

DISCUSSION:

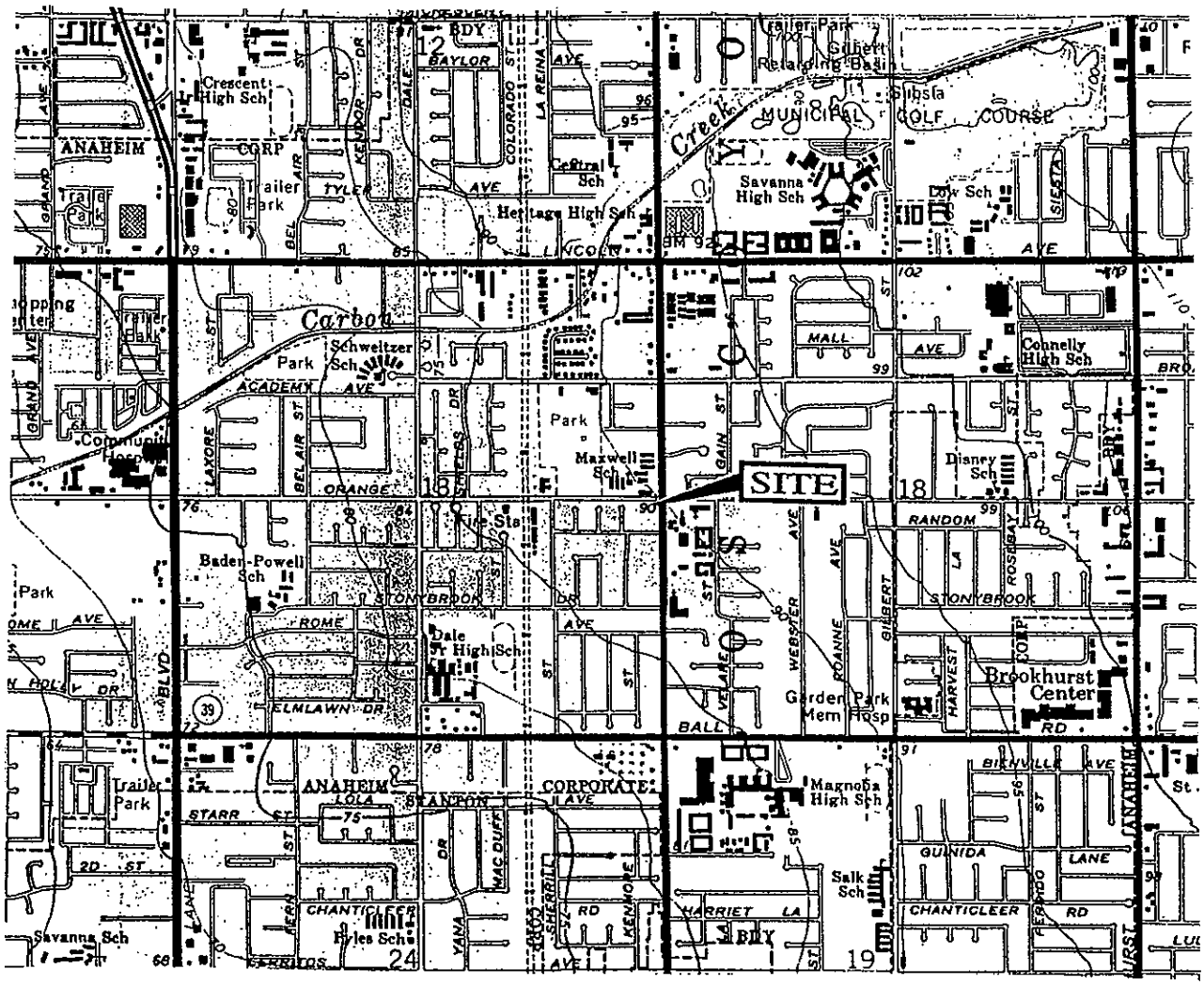
Groundwater conditions observed during the fourth quarter 2004 remained consistent with previous quarters. No concentrations of fuel-related hydrocarbons or oxygenates were reported in groundwater samples collected from the Site, with the exception of 86 ug/l reported in groundwater samples collected from well MW-2.

ATLANTIC RICHFIELD COMPANY QUARTERLY UPDATE REPORT
FOURTH QUARTER 2004
JANUARY 30, 2005

Facility No.: 3023 Address: 601 South Magnolia Avenue, Anaheim, California

ATTACHMENTS:

Site Location Map (Figure 1)
Groundwater Elevation Contour Map (Figure 2)
Groundwater Analyses Map (Figure 3)
Historical Groundwater Elevation Data (Table 1)
Historical Groundwater Analytical Results (Table 2)
Field Data (Attachment A)
Laboratory Report and Chain-of-Custody Documentation (Attachment B)



GENERAL NOTES:

BASE MAP FROM U.S.G.S.

ANAHEIM, CALIFORNIA

7.5 MINUTE TOPOGRAPHIC MAP

1965

PHOTOREVISED 1981

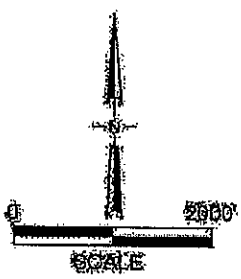
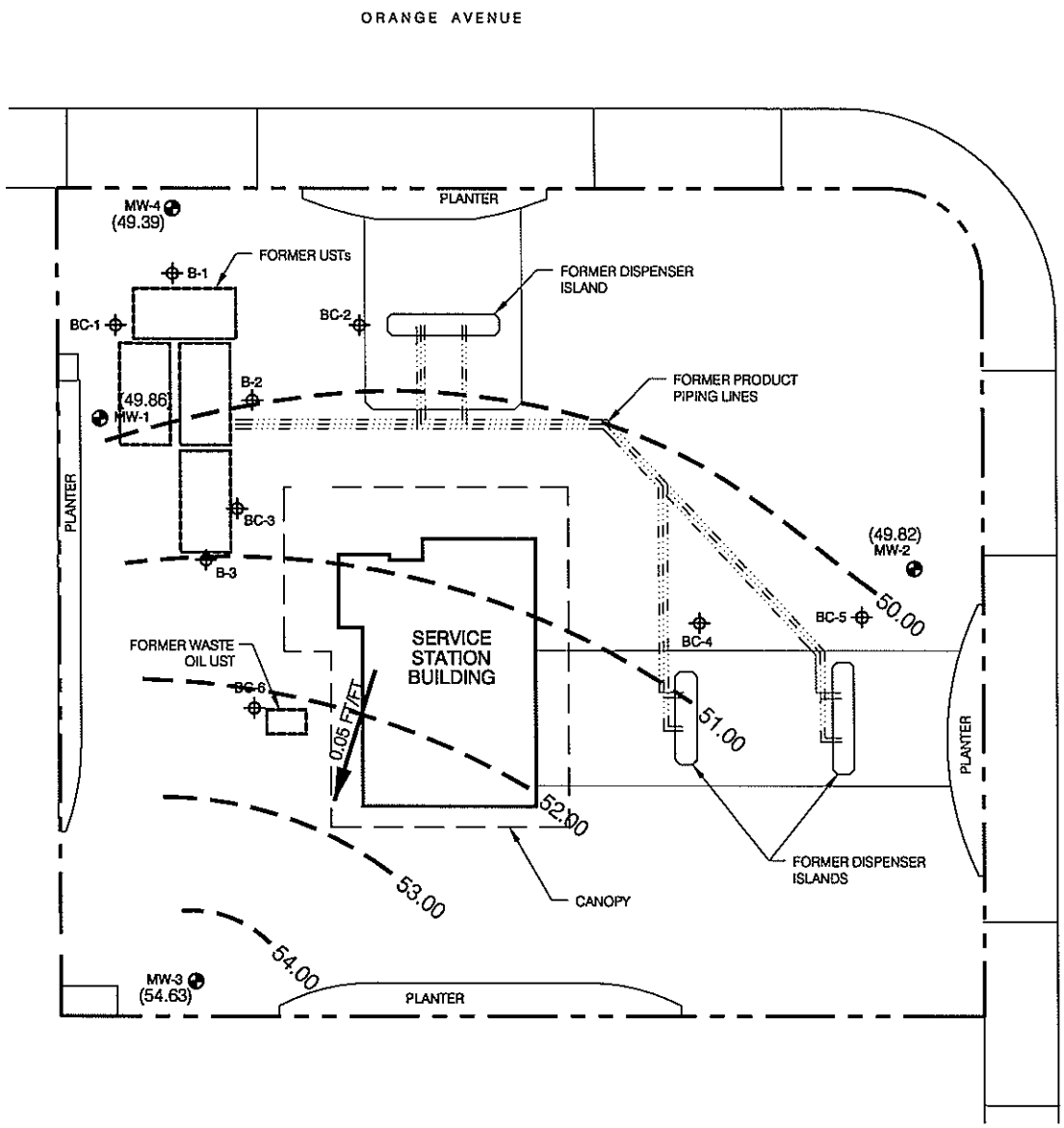


FIGURE 1
SITE LOCATION MAP
ARCO FACILITY NO. 3023
601 SOUTH MAGNOLIA AVENUE
ANAHEIM, CA

PROJECT NO. AM00-826		DRAWN BY
FILE NO.		PREPARED BY M. BALDWIN
DATE 10/21/02	REV.	REVIEWED BY

Delta Environmental Consultants, Inc.



0 30 60 FEET
APPROXIMATE SCALE

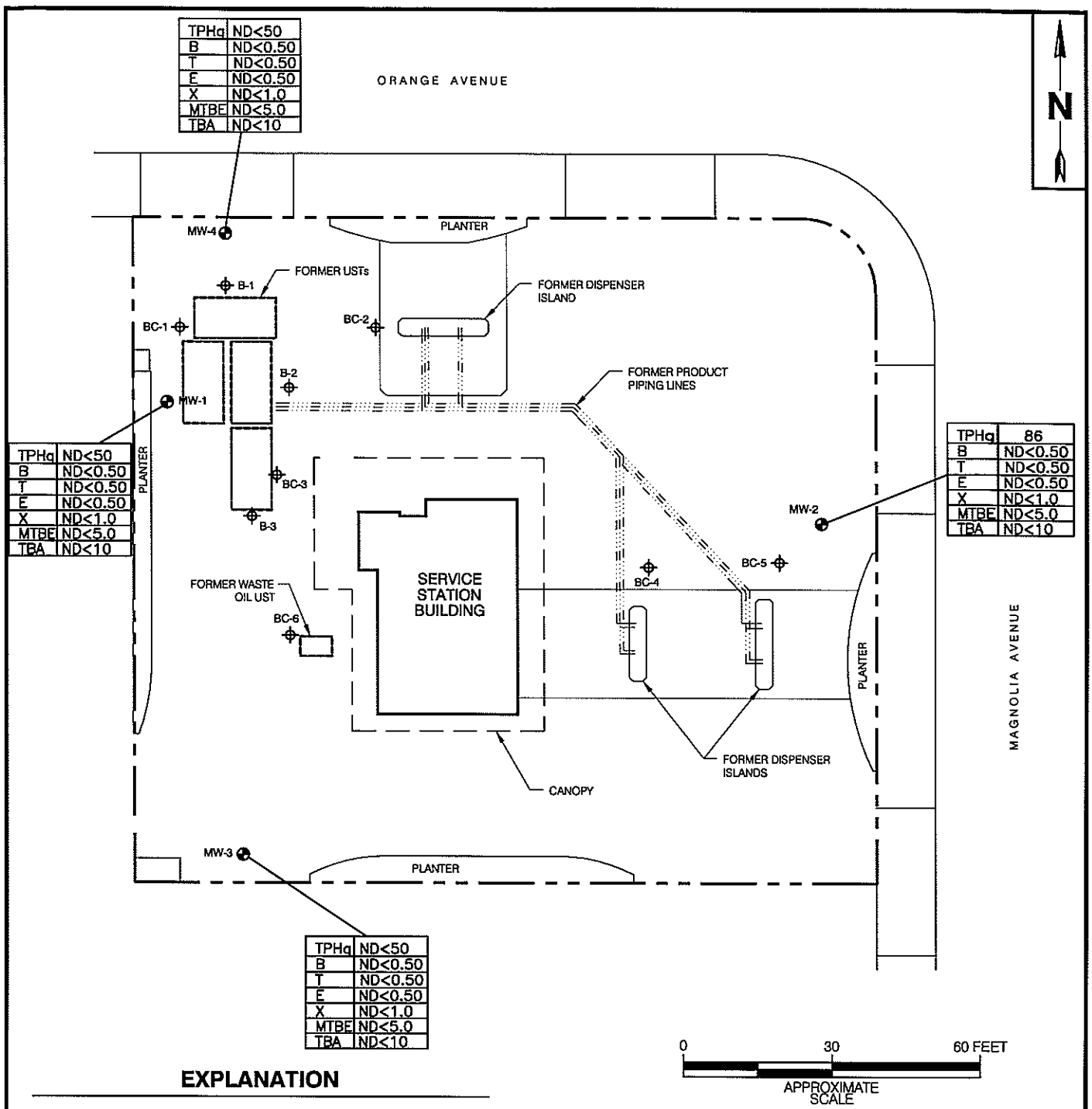
EXPLANATION

BC-6 ⊕	APPROXIMATE LOCATION OF SOIL BORING
MW-4 ◕	APPROXIMATE LOCATION OF GROUNDWATER MONITORING WELL
(49.86)	GROUNDWATER ELEVATION IN FEET MEAN SEA LEVEL
54.00 — — —	WATER TABLE CONTOUR IN FEET CONTOUR INTERVAL: 1.00 FOOT
0.05 FT/FT →	GROUNDWATER FLOW DIRECTION AND GRADIENT

REFERENCE:
BROWN & CALDWELL, 1988.

FIGURE 2
GROUNDWATER ELEVATION CONTOUR MAP
NOVEMBER 5, 2004
FORMER ARCO FACILITY NO. 3023
601 SOUTH MAGNOLIA AVENUE
ANAHEIM, CA.

PROJECT NO. 00826	DRAWN BY K. MARTIN	A B C F44	Delta Environmental Consultants, Inc.
FILE NO. A0-826-01Q	PREPARED BY P. MANNS		
DATE 05 JAN 05 / REV.	REVIEWED BY		



TPHg	ND<50
B	ND<0.50
T	ND<0.50
E	ND<0.50
X	ND<1.0
MTBE	ND<5.0
TBA	ND<10

TPHg	ND<50
B	ND<0.50
T	ND<0.50
E	ND<0.50
X	ND<1.0
MTBE	ND<5.0
TBA	ND<10

TPHg	86
B	ND<0.50
T	ND<0.50
E	ND<0.50
X	ND<1.0
MTBE	ND<5.0
TBA	ND<10

TPHg	ND<50
B	ND<0.50
T	ND<0.50
E	ND<0.50
X	ND<1.0
MTBE	ND<5.0
TBA	ND<10

EXPLANATION

BC-6 — APPROXIMATE LOCATION OF SOIL BORING

MW-4 — APPROXIMATE LOCATION OF GROUNDWATER MONITORING WELL

TPHg	ND<50	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
B	ND<0.50	BENZENE BY EPA 8260B
T	ND<0.50	TOLUENE BY EPA 8260B
E	ND<0.50	ETHYLBENZENE BY EPA 8260B
X	ND<1.0	TOTAL XYLENES BY EPA 8260B
MTBE	ND<5.0	METHYL TERT-BUTYL ETHER BY EPA 8260B
TBA	ND<10	TERT-BUTYL ALCOHOL

ND<2.0 — NOT DETECTED AT OR ABOVE STATED LABORATORY REPORTING LIMIT

NOTE: ALL CONCENTRATIONS ARE IN MICROGRAMS PER LITER (ug/L)

REFERENCE:
BROWN & CALDWELL, 1988.

FIGURE 3
GROUNDWATER ANALYSES MAP
NOVEMBER 5, 2004
FORMER ARCO FACILITY NO. 3023
601 SOUTH MAGNOLIA AVENUE
ANAHEIM, CA.

PROJECT NO. 00826		DRAWN BY K. MARTIN	A B C G44
FILE NO. A0-826-01Q		PREPARED BY P. MANNS	Delta Environmental Consultants, Inc.
DATE 05 JAN 05	REV.	REVIEWED BY	

TABLE 1
HISTORICAL GROUNDWATER GAUGING DATA
ARCO Facility No. 3023
601 South Magnolia Avenue
Anaheim, California

Well	Date Measured	TOC Elevation (feet msl)	Depth to LPH (feet)	Depth to Water (feet)	LPH Thickness (feet)	Water Elevation (feet msl)	Comments
MW-1	5/13/1998	89.66	NA	NA	NA	NA	
MW-1	8/3/1998	89.66	NA	35.62	NA	54.04	
MW-1	8/25/1998	89.66	NA	35.71	NA	53.95	
MW-1	9/10/1998	89.66	NA	35.81	NA	53.85	
MW-1	12/9/1998	89.66	NA	35.57	NA	54.09	
MW-1	2/16/1999	89.66	NA	35.12	NA	54.54	
MW-1	5/11/1999	89.66	NA	34.91	NA	54.75	
MW-1	8/10/1999	89.66	NA	35.68	NA	53.98	
MW-1	11/2/1999	89.66	NA	36.47	NA	53.19	
MW-1	2/9/2000	89.66	NA	36.44	NA	53.22	
MW-1	5/3/2000	89.66	NA	36.08	NA	53.58	
MW-1	7/26/2000	89.66	NA	37.07	NA	52.59	
MW-1	11/15/2000	89.66	NA	37.95	NA	51.71	
MW-1	2/15/2001	89.66	NA	36.15	NA	53.51	
MW-1	6/13/2001	89.66	NA	37.17	NA	52.49	
MW-1	9/27/2001	89.66	NA	38.37	NA	51.29	
MW-1	12/6/2001	89.66	NA	38.98	NA	50.68	
MW-1	1/24/2002	89.66	NA	38.97	NA	50.69	
MW-1	4/23/2002	89.66	NA	39.06	NA	50.60	
MW-1	8/2/2002	89.66	NA	40.11	NA	49.55	
MW-1	10/11/2002	89.66	NA	40.80	NA	48.86	
MW-1	1/16/2003	89.66	NA	40.67	NA	48.99	
MW-1	4/3/2003	89.66	NA	39.99	NA	49.67	
MW-1	7/3/2003	89.66	NA	39.73	NA	49.93	
MW-1	11/3/2003	89.66	NA	40.13	NA	49.53	
MW-1	2/6/2004	89.66	NA	39.74	NA	49.92	
MW-1	5/7/2004	89.66	NA	39.13	NA	50.53	
MW-1	8/6/2004	89.66	NA	39.78	NA	49.88	
MW-1	11/5/2004	89.66	NA	39.80	NA	49.86	
MW-2	8/3/1998	89.80	NA	35.78	NA	54.02	
MW-2	8/25/1998	89.80	NA	35.89	NA	53.91	
MW-2	9/10/1998	89.80	NA	34.27	NA	55.53	
MW-2	12/9/1998	89.80	NA	35.69	NA	54.11	
MW-2	2/16/1999	89.80	NA	35.22	NA	54.58	
MW-2	5/11/1999	89.80	NA	35.05	NA	54.75	
MW-2	8/10/1999	89.80	NA	35.88	NA	53.92	
MW-2	11/2/1999	89.80	NA	36.72	NA	53.08	
MW-2	2/9/2000	89.80	NA	36.68	NA	53.12	
MW-2	5/3/2000	89.80	NA	36.48	NA	53.32	
MW-2	7/26/2000	89.80	NA	37.42	NA	52.38	
MW-2	11/15/2000	89.80	NA	38.40	NA	51.40	
MW-2	2/15/2001	89.80	NA	38.49	NA	51.31	
MW-2	6/13/2001	89.80	NA	37.51	NA	52.29	
MW-2	9/27/2001	89.80	NA	38.55	NA	51.25	
MW-2	12/6/2001	89.80	NA	38.11	NA	51.69	
MW-2	1/24/2002	89.80	NA	39.12	NA	50.68	
MW-2	4/23/2002	89.80	NA	39.19	NA	50.61	
MW-2	8/2/2002	89.80	NA	40.21	NA	49.59	
MW-2	10/11/2002	89.80	NA	40.89	NA	48.91	
MW-2	1/16/2003	89.80	NA	40.78	NA	49.02	

TABLE 1
HISTORICAL GROUNDWATER GAUGING DATA
ARCO Facility No. 3023
601 South Magnolia Avenue
Anaheim, California

Well	Date Measured	TOC Elevation (feet msl)	Depth to LPH (feet)	Depth to Water (feet)	LPH Thickness (feet)	Water Elevation (feet msl)	Comments
MW-2	4/3/2003	89.80	NA	40.13	NA	49.67	
MW-2	7/3/2003	89.80	NA	39.86	NA	49.94	
MW-2	11/3/2003	89.80	NA	40.23	NA	49.57	
MW-2	2/6/2004	89.80	NA	39.90	NA	49.90	
MW-2	5/7/2004	89.80	NA	39.28	NA	50.52	
MW-2	8/6/2004	89.80	NA	39.95	NA	49.85	
MW-2	11/5/2004	89.80	NA	39.98	NA	49.82	
MW-3	8/3/1998	91.17	NA	34.41	NA	56.76	
MW-3	8/25/1998	91.17	NA	34.42	NA	56.75	
MW-3	9/10/1998	91.17	NA	35.99	NA	55.18	
MW-3	12/9/1998	91.17	NA	33.62	NA	57.55	
MW-3	2/16/1999	91.17	NA	33.39	NA	57.78	
MW-3	5/11/1999	91.17	NA	33.23	NA	57.94	
MW-3	8/10/1999	91.17	NA	33.38	NA	57.79	
MW-3	11/2/1999	91.17	NA	34.80	NA	56.37	
MW-3	2/9/2000	91.17	NA	33.92	NA	57.25	
MW-3	5/3/2000	91.17	NA	33.94	NA	57.23	
MW-3	7/26/2000	91.17	NA	34.24	NA	56.93	
MW-3	11/15/2000	91.17	NA	34.62	NA	56.55	
MW-3	2/15/2001	91.17	NA	34.80	NA	56.37	
MW-3	6/13/2001	91.17	NA	34.26	NA	56.91	
MW-3	9/27/2001	91.17	NA	34.54	NA	56.63	
MW-3	12/6/2001	91.17	NA	34.85	NA	56.32	
MW-3	1/24/2002	91.17	NA	34.93	NA	56.24	
MW-3	4/23/2002	91.17	NA	35.08	NA	56.09	
MW-3	8/2/2002	91.17	NA	35.81	NA	55.36	
MW-3	10/11/2002	91.17	NA	36.41	NA	54.76	
MW-3	1/16/2003	91.17	NA	37.55	NA	53.62	
MW-3	4/3/2003	91.17	NA	36.74	NA	54.43	
MW-3	7/3/2003	91.17	NA	36.63	NA	54.54	
MW-3	11/3/2003	91.17	NA	36.84	NA	54.33	
MW-3	2/6/2004	91.17	NA	36.62	NA	54.55	
MW-3	5/7/2004	91.17	NA	36.34	NA	54.83	
MW-3	8/6/2004	91.17	NA	36.62	NA	54.55	
MW-3	11/5/2004	91.17	NA	36.54	NA	54.63	
MW-4	8/10/1999	89.25	NA	36.38	NA	52.87	
MW-4	11/2/1999	89.25	NA	37.32	NA	51.93	
MW-4	2/9/2000	89.25	NA	37.20	NA	52.05	
MW-4	5/3/2000	89.25	NA	36.89	NA	52.36	
MW-4	7/26/2000	89.25	NA	37.88	NA	51.37	
MW-4	11/15/2000	89.25	NA	38.74	NA	50.51	
MW-4	2/15/2001	89.25	NA	38.78	NA	50.47	
MW-4	6/13/2001	89.25	NA	37.81	NA	51.44	
MW-4	9/27/2001	89.25	NA	38.86	NA	50.39	
MW-4	12/6/2001	89.25	NA	39.35	NA	49.90	
MW-4	1/24/2002	89.25	NA	39.29	NA	49.96	
MW-4	4/23/2002	89.25	NA	39.36	NA	49.89	
MW-4	8/2/2002	89.25	NA	40.32	NA	48.93	
MW-4	10/11/2002	89.25	NA	40.99	NA	48.26	
MW-4	1/16/2003	89.25	NA	41.09	NA	48.16	

TABLE 1

HISTORICAL GROUNDWATER GAUGING DATA

ARCO Facility No. 3023
601 South Magnolia Avenue
Anaheim, California

Well	Date Measured	TOC Elevation (feet msl)	Depth to LPH (feet)	Depth to Water (feet)	LPH Thickness (feet)	Water Elevation (feet msl)	Comments
MW-4	4/3/2003	89.25	NA	39.98	NA	49.27	
MW-4	7/3/2003	89.25	NA	39.76	NA	49.49	
MW-4	11/3/2003	89.25	NA	40.10	NA	49.15	
MW-4	2/6/2004	89.25	NA	39.76	NA	49.49	
MW-4	5/7/2004	89.25	NA	39.17	NA	50.08	
MW-4	8/6/2004	89.25	NA	39.84	NA	49.41	
MW-4	11/5/2004	89.25	NA	39.86	NA	49.39	

Notes: TOC = Top of casing elevation in feet mean sea level

LPH = Liquid-phase hydrocarbons

Note: Water Elevation, if LPH is present, is corrected according to the following formula, (TOC elevation - depth to water) + (0.75 x LPH thickness).

NA = Not applicable

TABLE 2
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
ARCO Facility No. 3023
601 South Magnolia Avenue
Anaheim, California

Well	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE 8020/8021B (µg/L)	MTBE 8260B (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TBA (µg/L)	Ethanol (µg/L)	Comments
MW-1	5/13/1998	ND<50	1.1	ND<0.30	0.41	0.65	220	NA	NA	NA	NA	NA	NA	
MW-1	8/3/1998	ND<50	1.3	ND<0.30	0.36	1.1	580	NA	NA	NA	NA	NA	NA	
MW-1	8/25/1998	ND<50	1.5	ND<0.30	ND<0.30	0.74	470	990	NA	NA	NA	NA	NA	
MW-1	9/10/1998	ND<50	0.83	ND<0.30	ND<0.30	ND<0.60	560	630	NA	NA	NA	NA	NA	
MW-1	12/9/1998	ND<50	0.42	ND<0.30	ND<0.30	ND<0.60	990	1000	NA	NA	NA	NA	NA	
MW-1	2/16/1999	160	19	6.0	8.7	27	1100	1100	NA	NA	NA	NA	NA	
MW-1	5/11/1999	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	560	720	NA	NA	NA	NA	NA	
MW-1	8/10/1999	ND<50	ND<2.0	ND<2.0	ND<2.0	ND<4.0	NA	670	NA	NA	NA	NA	NA	BTEX by EPA Method 8260B
MW-1	11/2/1999	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	110	110	NA	NA	NA	NA	NA	
MW-1	11/2/1999	ND<100	ND<0.50	ND<0.50	ND<0.50	ND<0.50	88.8	98.4	NA	NA	NA	NA	NA	Dulpicate sample
MW-1	2/9/2000	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	11	11	NA	NA	NA	NA	NA	
MW-1	5/3/2000	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	30	20	NA	NA	NA	NA	NA	
MW-1	7/26/2000	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5	NA	2.3	NA	NA	NA	NA	NA	BTEX by EPA Method 8260B
MW-1	11/15/2000	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	ND<5.0	NA	NA	NA	NA	NA	NA	
MW-1	2/15/2001	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	NA	NA	NA	NA	NA	
MW-1	6/13/2001	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	NA	NA	NA	NA	NA	
MW-1	9/27/2001	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	NA	NA	NA	NA	NA	
MW-1	12/6/2001	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	NA	NA	NA	NA	NA	
MW-1	1/24/2002	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	NA	NA	NA	NA	NA	
MW-1	4/23/2002	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	NA	NA	NA	NA	NA	
MW-1	8/2/2002	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<25	NA	
MW-1	10/11/2002	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<25	NA	
MW-1	1/16/2003	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	NA	
MW-1	4/3/2003	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-1	7/3/2003	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-1	11/3/2003	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-1	2/6/2004	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-1	5/7/2004	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-1	8/6/2004	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-1	11/5/2004	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-2	8/3/1998	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	800	NA	NA	NA	NA	NA	NA	
MW-2	8/25/1998	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	ND<10	NA	NA	NA	NA	NA	NA	
MW-2	9/10/1998	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	190	220	NA	NA	NA	NA	NA	
MW-2	12/9/1998	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	ND<10	NA	NA	NA	NA	NA	NA	
MW-2	2/16/1999	ND<50	0.45	ND<0.30	ND<0.30	ND<0.60	93	75	NA	NA	NA	NA	NA	
MW-2	5/11/1999	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	ND<10	NA	NA	NA	NA	NA	NA	

TABLE 2

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

ARCO Facility No. 3023
601 South Magnolia Avenue
Anaheim, California

Well	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE 8020/8021B (µg/L)	MTBE 8260B (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TBA (µg/L)	Ethanol (µg/L)	Comments
MW-2	8/10/1999	ND<50	ND<2.0	ND<2.0	ND<2.0	ND<4.0	NA	ND<5.0	NA	NA	NA	NA	NA	BTEX by EPA Method 8260B
MW-2	11/2/1999	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	ND<10	NA	NA	NA	NA	NA	NA	
MW-2	11/2/1999	ND<100	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<10	NA	NA	NA	NA	NA	NA	Dulpicate sample
MW-2	2/9/2000	ND<50	ND<0.30	0.70	0.34	1.5	ND<10	NA	NA	NA	NA	NA	NA	
MW-2	5/3/2000	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	ND<10	NA	NA	NA	NA	NA	NA	
MW-2	7/26/2000	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5	NA	ND<1.0	NA	NA	NA	NA	NA	BTEX by EPA Method 8260B
MW-2	11/15/2000	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.60	ND<5.0	NA	NA	NA	NA	NA	NA	
MW-2	2/15/2001	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	NA	NA	NA	NA	NA	
MW-2	6/13/2001	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	NA	NA	NA	NA	NA	
MW-2	9/27/2001	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	NA	NA	NA	NA	NA	
MW-2	12/6/2001	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	NA	NA	NA	NA	NA	
MW-2	1/24/2002	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	NA	NA	NA	NA	NA	
MW-2	4/23/2002	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	NA	NA	NA	NA	NA	
MW-2	8/2/2002	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<25	NA	
MW-2	10/11/2002	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<25	NA	
MW-2	1/16/2003	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	NA	
MW-2	4/3/2003	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-2	7/3/2003	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-2	11/3/2003	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-2	2/6/2004	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-2	5/7/2004	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-2	8/6/2004	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-2	11/5/2004	86	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-3	8/3/1998	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	ND<10	NA	NA	NA	NA	NA	NA	
MW-3	8/25/1998	ND<50	1.0	ND<0.30	ND<0.30	ND<0.60	220	410	NA	NA	NA	NA	NA	
MW-3	9/10/1998	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	ND<10	NA	NA	NA	NA	NA	NA	
MW-3	12/9/1998	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	120	160	NA	NA	NA	NA	NA	
MW-3	2/16/1999	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	ND<10	NA	NA	NA	NA	NA	NA	
MW-3	5/11/1999	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	71	83	NA	NA	NA	NA	NA	
MW-3	8/10/1999	ND<50	ND<2.0	ND<2.0	ND<2.0	ND<4.0	NA	93	NA	NA	NA	NA	NA	BTEX by EPA Method 8260B
MW-3	11/2/1999	ND<100	ND<0.50	ND<0.50	ND<0.50	ND<0.50	72	74.2	NA	NA	NA	NA	NA	Dulpicate sample
MW-3	11/2/1999	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	95	83	NA	NA	NA	NA	NA	
MW-3	2/9/2000	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	57	42	NA	NA	NA	NA	NA	
MW-3	5/3/2000	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	57	40	NA	NA	NA	NA	NA	
MW-3	7/26/2000	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5	NA	45	NA	NA	NA	NA	NA	BTEX by EPA Method 8260B
MW-3	11/15/2000	ND<50	0.30	1.4	0.38	1.9	20	26	NA	NA	NA	NA	NA	

TABLE 2
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
ARCO Facility No. 3023
601 South Magnolia Avenue
Anaheim, California

Well	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE 8020/8021B (µg/L)	MTBE 8260B (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TBA (µg/L)	Ethanol (µg/L)	Comments
MW-3	2/15/2001	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	61	NA	NA	NA	NA	NA	
MW-3	6/13/2001	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	34	NA	NA	NA	NA	NA	
MW-3	9/27/2001	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	30	NA	NA	NA	NA	NA	
MW-3	12/6/2001	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	15	NA	NA	NA	NA	NA	
MW-3	1/24/2002	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	10	NA	NA	NA	NA	NA	
MW-3	4/23/2002	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	9.4	NA	NA	NA	NA	NA	
MW-3	8/2/2002	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<25	NA	
MW-3	10/11/2002	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<25	NA	
MW-3	1/16/2003	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	NA	
MW-3	4/3/2003	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-3	7/3/2003	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-3	11/3/2003	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-3	2/6/2004	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-3	5/7/2004	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-3	8/6/2004	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-3	11/5/2004	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-4	8/10/1999	ND<50	ND<2.0	ND<2.0	ND<2.0	ND<4.0	NA	ND<5.0	NA	NA	NA	NA	NA	BTEX by EPA Method 8260B
MW-4	11/2/1999	ND<100	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<10	NA	NA	NA	NA	NA	NA	Dulpicate sample
MW-4	11/2/1999	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	ND<10	NA	NA	NA	NA	NA	NA	
MW-4	2/9/2000	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	ND<10	NA	NA	NA	NA	NA	NA	
MW-4	5/3/2000	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	ND<10	NA	NA	NA	NA	NA	NA	
MW-4	7/26/2000	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5	NA	ND<1.0	NA	NA	NA	NA	NA	BTEX by EPA Method 8260B
MW-4	11/15/2000	ND<50	ND<0.30	0.44	ND<0.30	0.65	ND<5.0	NA	NA	NA	NA	NA	NA	
MW-4	2/15/2001	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	NA	NA	NA	NA	NA	
MW-4	6/13/2001	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	NA	NA	NA	NA	NA	
MW-4	9/27/2001	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	NA	NA	NA	NA	NA	
MW-4	12/6/2001	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	NA	NA	NA	NA	NA	
MW-4	1/24/2002	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	NA	NA	NA	NA	NA	
MW-4	4/23/2002	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<25	NA	
MW-4	8/2/2002	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<25	NA	
MW-4	10/11/2002	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<25	NA	
MW-4	1/16/2003	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	NA	
MW-4	4/3/2003	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-4	7/3/2003	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-4	11/3/2003	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-4	2/6/2004	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	

TABLE 2

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

ARCO Facility No. 3023
601 South Magnolia Avenue
Anaheim, California

Well	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE 8020/8021B (µg/L)	MTBE 8260B (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TBA (µg/L)	Ethanol (µg/L)	Comments
MW-4	5/7/2004	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-4	8/6/2004	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
MW-4	11/5/2004	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
Trip Blank	8/2/2002	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<25	NA	
Trip Blank	10/11/2002	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<25	NA	
Trip Blank	1/16/2003	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	NA	
Trip Blank	4/3/2003	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
Trip Blank	7/3/2003	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
Trip Blank	11/3/2003	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
Trip Blank	2/6/2004	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
Trip Blank	5/7/2004	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
Trip Blank	8/6/2004	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	
Trip Blank	11/5/2004	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	NA	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<150	

Notes: EPA = Environmental Protection Agency
TPHg = Total petroleum hydrocarbons as gasoline
µg/L = Micrograms per liter
MTBE = Methyl Tertiary butyl ether
DIPE = Di-isopropyl ether
ETBE = Ethyl Tertiary butyl ether
TAME = Tertiary amyl methyl ether
TBA = Tertiary butanol
BTEX = Benzene, toluene, ethylbenzene, and xylenes

NA = Not analyzed
ND<0.30 = Not detected at or above stated laboratory reporting limit
TPHg analyses by EPA 8015/8015B
BTEX analyses by EPA 8020/8021 prior to 2/15/01 (currently EPA 8260B)
DIPE, ETBE, TAME, TBA, and ethanol analyses by EPA 8260B

ATTACHMENT A

Field Data

DELTA ENVIRONMENTAL CONSULTANTS

GROUNDWATER GAUGING DATA

Facility No.: 3023	Date: 11/5/04
Facility Location: Anaheim	Technician: J. Velasquez
Project Manager: B. VanWagner	Project No.: 00-826

Gauging Order	Well I.D.	Time	Total Depth (feet)	Depth to Water (feet)	Depth to LPH (feet)	LPH Apparent Thickness (feet)	Gauge or Sample (G or S)	Physical Observations / Comments
	MW-4	0527	49.21	39.86				
	MW-1	0532	49.51	39.80				
	MW-2	0537	49.82	39.98				
	MW-3	0542	49.91	36.54				

Decon Method: Triple rinse

Measuring Device: Solinst

Notes:

DELTA ENVIRONMENTAL CONSULTANTS
SAMPLING INFORMATION SHEET

WEATHER CONDITION:

CLOUD COVER: None

WIND SPEED: Slight

TEMPERATURE: 54°F

WELL DESCRIPTION:

CASING DIAMETER: 4"

DEPTH TO WATER: 39.86 TIME: 0527

WELL DEPTH: 49.21

PROJECT:

DATE: 11/5/04

CLIENT: ARCO 3023

LOCATION: Anaheim

DELTA NO:

PROJECT MGR.: B. VanWagner

SAMPLING:

SAMPLING POINT MW-4

SAMPLE I.D. NO. MW-4 TIME: 0758

SAMPLES COLLECTED 5

SAMPLE APPEARANCE clear W.L. 40.07

PURGING METHOD:

[X] VACUUM TRUCK [ ] BAILER ____ [ ] OTHER ____

[(49.21) - (39.86)] × (.65) × (3) = 18

WELL DEPTH — D.T.W — .65/4", .17/2" — PURGE VOLS. — PURGE VOLUME

CLEANING DONE IN FIELD Triple rinse

EVACUATION\STABILIZATION TEST DATA

TIME	pH (UNITS)	TEMP. CORRECTED CONDUCTANCE (µS/cm)	TEMPERATURE °F	TURBIDITY (NTUs)	CUMULATIVE VOL. OF H_2O REMOVED FROM WELL (gal.)	PUMPING RATE (gpm)
0618	7.31	2430	69.0	-	6	
0622	7.39	2360	63.4	-	12	
0638	7.45	2310	62.8	-	16	

BAILING START TIME: 0614 am/pm BAILING FINISH TIME: 0638 am\pm

COMMENTS: 80% recharge at 41.73 well went dry at 0622. Waited 10 min and tried again. Well went dry again.

TRANSPORTATION (THERMAL PRESERVATION) Ice

FORM COMPLETED BY J. Velasquez SAMPLED BY: J. Velasquez

DELTA ENVIRONMENTAL CONSULTANTS
SAMPLING INFORMATION SHEET

WEATHER CONDITION:

CLOUD COVER: None
WIND SPEED: slight
TEMPERATURE: 56°F

PROJECT:

DATE: 11/5/04
CLIENT: ARCO 3023
LOCATION: Anaheim
DELTA NO:
PROJECT MGR.: B. VanWagner

WELL DESCRIPTION:

CASING DIAMETER: 4"
DEPTH TO WATER: 39.80 TIME: 0532
WELL DEPTH: 49.51

SAMPLING:

SAMPLING POINT MW-1
SAMPLE I.D. NO. MW-1 TIME: 0810
SAMPLES COLLECTED 5
SAMPLE APPEARANCE clear W.L. 40.31

PURGING METHOD:

☒ VACUUM TRUCK ☐ BAILER ____ ☐ OTHER ____

[(49.51) - (39.80)] × (.65) × (3) = 19

WELL DEPTH — D.T.W — .65/4", .17/2" — PURGE VOLS. — PURGE VOLUME

CLEANING DONE IN FIELD Triple rinse

EVACUATION\STABILIZATION TEST DATA

TIME	pH (UNITS)	TEMP. CORRECTED CONDUCTANCE (µS/cm)	TEMPERATURE °F	TURBIDITY (NTUs)	CUMULATIVE VOL. OF H_2O REMOVED FROM WELL (gal.)	PUMPING RATE (gpm)
0646	7.50	2270	62.1	-	4	
0651	7.54	2410	60.8	-	12	
0706	7.55	2530	60.1	-	16	

BAILING START TIME: 0642 am/pm BAILING FINISH TIME: 0706 am\pm

COMMENTS: 80% recharge at 41.74. Well went dry at 0651. Waited 10 min. and tried again. Well went dry again.

TRANSPORTATION (THERMAL PRESERVATION) ice

FORM COMPLETED BY J. Velasquez SAMPLED BY: J. Velasquez

DELTA ENVIRONMENTAL CONSULTANTS
SAMPLING INFORMATION SHEET

WEATHER CONDITION:

CLOUD COVER: None

WIND SPEED: slight

TEMPERATURE: 55°F

WELL DESCRIPTION:

CASING DIAMETER: 4"

DEPTH TO WATER: 39.98 TIME: 0537

WELL DEPTH: 49.82

PROJECT:

DATE: 11/5/04

CLIENT: ARCO 3023

LOCATION: Anaheim

DELTA NO:

PROJECT MGR.: B. VanWagner

SAMPLING:

SAMPLING POINT MW-2

SAMPLE I.D. NO. MW-2 TIME: 0922

SAMPLES COLLECTED 5

SAMPLE APPEARANCE clear W.L. 40.02

PURGING METHOD:

☒ VACUUM TRUCK ☐ BAILER ____ ☐ OTHER ____

((49.82) - (39.98)) × (.65) × (3) = 19

WELL DEPTH — D.T.W — .65/4", .17/2" — PURGE VOLS. — PURGE VOLUME

CLEANING DONE IN FIELD Triple rinse

EVACUATION\STABILIZATION TEST DATA

TIME	pH (UNITS)	TEMP. CORRECTED CONDUCTANCE (µS/cm)	TEMPERATURE °F	TURBIDITY (NTUs)	CUMULATIVE VOL. OF H_2O REMOVED FROM WELL (gal.)	PUMPING RATE (gpm)
0713	7.63	2870	62.4	-	6	
0716	7.63	2870	62.9	-	12	
0720	7.63	2880	63.3	-	19	

BAILING START TIME: 0709 am/pm BAILING FINISH TIME: 0720 am\pm

COMMENTS: 80% recharge at 91.95.

TRANSPORTATION (THERMAL PRESERVATION) ice

FORM COMPLETED BY J. Velasquez SAMPLED BY: J. Velasquez

DELTA ENVIRONMENTAL CONSULTANTS
SAMPLING INFORMATION SHEET

WEATHER CONDITION:

CLOUD COVER: None

WIND SPEED: slight

TEMPERATURE: 59°F

WELL DESCRIPTION:

CASING DIAMETER: 4"

DEPTH TO WATER: 36.54 TIME: 0542

WELL DEPTH: 49.91

PROJECT:

DATE: 11/5/04

CLIENT: ARCO 3023

LOCATION: Anaheim

DELTA NO:

PROJECT MGR.: B. VanWagner

SAMPLING:

SAMPLING POINT MW-3

SAMPLE I.D. NO. MW-3 TIME: 0834

SAMPLES COLLECTED 5

SAMPLE APPEARANCE clear W.L. 36.73

PURGING METHOD:

☒ VACUUM TRUCK ☐ BAILER ____ ☐ OTHER ____

[(49.91) - (36.54)] × (.65) × (3) = 26

WELL DEPTH — D.T.W — .65/4", .17/2" — PURGE VOLS. — PURGE VOLUME

CLEANING DONE IN FIELD Triple rinse

EVACUATION\STABILIZATION TEST DATA

TIME	pH (UNITS)	TEMP. CORRECTED CONDUCTANCE (µS/cm)	TEMPERATURE °F	TURBIDITY (NTUs)	CUMULATIVE VOL. OF H_2O REMOVED FROM WELL (gal.)	PUMPING RATE (gpm)
0728	7.62	2700	64.4	-	9	
0732	7.63	2790	64.8	-	18	
0746	7.63	2830	64.9	-	23	

BAILING START TIME: 0723 am/pm BAILING FINISH TIME: 0746 am\pm

COMMENTS: 80% recharge at 39.21. Well went dry at 0732. Waited 10 min. and tried again. Well went dry again.

TRANSPORTATION (THERMAL PRESERVATION) Ice

FORM COMPLETED BY J. Velasquez SAMPLED BY: J. Velasquez

ATTACHMENT B

Laboratory Report and Chain-of-Custody Documentation

Del Mar Analytical

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LABORATORY REPORT

Prepared For: Delta Env. Consultants - Aliso Viejo
27141 Aliso Creek Road, Suite 270
Aliso Viejo, CA 92656
Attention: Bryan Van Wagner

Project: ARCO 3023, Anaheim

Sampled: 11/05/04
Received: 11/05/04
Issued: 11/19/04 16:08

NELAP #01108CA CA ELAP #1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.
This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 3°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: No significant observations were made.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
INK0471-01	MW-4	Water
INK0471-02	MW-1	Water
INK0471-03	MW-2	Water
INK0471-04	MW-3	Water
INK0471-05	TB	Water

Reviewed By:

Del Mar Analytical, Irvine
Pat Abe
Project Manager

Del Mar Analytical

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Delta Env. Consultants - Aliso Viejo
27141 Aliso Creek Road, Suite 270
Aliso Viejo, CA 92656
Attention: Bryan Van Wagner

Project ID: ARCO 3023, Anaheim

Report Number: INK0471

Sampled: 11/05/04
Received: 11/05/04

VOLATILE FUEL HYDROCARBONS (EPA 5030/CADHS Mod. 8015)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK0471-01 (MW-4 - Water)								
Reporting Units: ug/l								
Volatile Fuel Hydrocarbons (C6-C12)	EPA 8015 Mod.	4K12030	50	ND	1	11/12/2004	11/12/2004	
Surrogate: 4-BFB (FID) (60-135%)				*80 %*				
Sample ID: INK0471-02 (MW-1 - Water)								
Reporting Units: ug/l								
Volatile Fuel Hydrocarbons (C6-C12)	EPA 8015 Mod.	4K12030	50	ND	1	11/12/2004	11/12/2004	
Surrogate: 4-BFB (FID) (60-135%)				*82 %*				
Sample ID: INK0471-03 (MW-2 - Water)								
Reporting Units: ug/l								
Volatile Fuel Hydrocarbons (C6-C12)	EPA 8015 Mod.	4K12030	50	**86**	1	11/12/2004	11/12/2004	
Surrogate: 4-BFB (FID) (60-135%)				*91 %*				
Sample ID: INK0471-04 (MW-3 - Water)								
Reporting Units: ug/l								
Volatile Fuel Hydrocarbons (C6-C12)	EPA 8015 Mod.	4K12030	50	ND	1	11/12/2004	11/12/2004	
Surrogate: 4-BFB (FID) (60-135%)				*85 %*				
Sample ID: INK0471-05 (TB - Water)								
Reporting Units: ug/l								
Volatile Fuel Hydrocarbons (C6-C12)	EPA 8015 Mod.	4K12030	50	ND	1	11/12/2004	11/12/2004	
Surrogate: 4-BFB (FID) (60-135%)				*88 %*				

Del Mar Analytical, Irvine
Pat Abe
Project Manager

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Attention: Bryan Van Wagner

Project ID: ARCO 3023, Anaheim

Report Number: INK0471

Sampled: 11/05/04
Received: 11/05/04

BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK0471-01 (MW-4 - Water)								
Reporting Units: ug/l								
Benzene	EPA 8260B	4K17011	0.50	ND	1	11/17/2004	11/17/2004	
Ethylbenzene	EPA 8260B	4K17011	0.50	ND	1	11/17/2004	11/17/2004	
Toluene	EPA 8260B	4K17011	0.50	ND	1	11/17/2004	11/17/2004	
o-Xylene	EPA 8260B	4K17011	0.50	ND	1	11/17/2004	11/17/2004	
m,p-Xylenes	EPA 8260B	4K17011	1.0	ND	1	11/17/2004	11/17/2004	
Xylenes, Total	EPA 8260B	4K17011	1.0	ND	1	11/17/2004	11/17/2004	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K17011	5.0	ND	1	11/17/2004	11/17/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K17011	5.0	ND	1	11/17/2004	11/17/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K17011	5.0	ND	1	11/17/2004	11/17/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K17011	5.0	ND	1	11/17/2004	11/17/2004	
tert-Butanol (TBA)	EPA 8260B	4K17011	10	ND	1	11/17/2004	11/17/2004	
Ethanol	EPA 8260B	4K17011	150	ND	1	11/17/2004	11/17/2004	IB,IA, LP
Surrogate: Dibromofluoromethane (80-120%)				*108 %*				
Surrogate: Toluene-d8 (80-120%)				*104 %*				
Surrogate: 4-Bromofluorobenzene (80-120%)				*96 %*				
Sample ID: INK0471-02 (MW-1 - Water)								
Reporting Units: ug/l								
Benzene	EPA 8260B	4K17006	0.50	ND	1	11/17/2004	11/17/2004	
Ethylbenzene	EPA 8260B	4K17006	0.50	ND	1	11/17/2004	11/17/2004	
Toluene	EPA 8260B	4K17006	0.50	ND	1	11/17/2004	11/17/2004	
o-Xylene	EPA 8260B	4K17006	0.50	ND	1	11/17/2004	11/17/2004	
m,p-Xylenes	EPA 8260B	4K17006	1.0	ND	1	11/17/2004	11/17/2004	
Xylenes, Total	EPA 8260B	4K17006	1.0	ND	1	11/17/2004	11/17/2004	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K17006	5.0	ND	1	11/17/2004	11/17/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K17006	5.0	ND	1	11/17/2004	11/17/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K17006	5.0	ND	1	11/17/2004	11/17/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K17006	5.0	ND	1	11/17/2004	11/17/2004	
tert-Butanol (TBA)	EPA 8260B	4K17006	10	ND	1	11/17/2004	11/17/2004	
Ethanol	EPA 8260B	4K17006	150	ND	1	11/17/2004	11/17/2004	
Surrogate: Dibromofluoromethane (80-120%)				*105 %*				
Surrogate: Toluene-d8 (80-120%)				*104 %*				
Surrogate: 4-Bromofluorobenzene (80-120%)				*102 %*				

Del Mar Analytical, Irvine
Pat Abe
Project Manager

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Delta Env. Consultants - Aliso Viejo
27141 Aliso Creek Road, Suite 270
Aliso Viejo, CA 92656
Attention: Bryan Van Wagner

Project ID: ARCO 3023, Anaheim

Report Number: INK0471

Sampled: 11/05/04
Received: 11/05/04

BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK0471-03 (MW-2 - Water)								
Reporting Units: ug/l								
Benzene	EPA 8260B	4K17006	0.50	ND	1	11/17/2004	11/17/2004	
Ethylbenzene	EPA 8260B	4K17006	0.50	ND	1	11/17/2004	11/17/2004	
Toluene	EPA 8260B	4K17006	0.50	ND	1	11/17/2004	11/17/2004	
o-Xylene	EPA 8260B	4K17006	0.50	ND	1	11/17/2004	11/17/2004	
m,p-Xylenes	EPA 8260B	4K17006	1.0	ND	1	11/17/2004	11/17/2004	
Xylenes, Total	EPA 8260B	4K17006	1.0	ND	1	11/17/2004	11/17/2004	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K17006	5.0	ND	1	11/17/2004	11/17/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K17006	5.0	ND	1	11/17/2004	11/17/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K17006	5.0	ND	1	11/17/2004	11/17/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K17006	5.0	ND	1	11/17/2004	11/17/2004	
tert-Butanol (TBA)	EPA 8260B	4K17006	10	ND	1	11/17/2004	11/17/2004	
Ethanol	EPA 8260B	4K17006	150	ND	1	11/17/2004	11/17/2004	
Surrogate: Dibromofluoromethane (80-120%)				*103 %*				
Surrogate: Toluene-d8 (80-120%)				*104 %*				
Surrogate: 4-Bromofluorobenzene (80-120%)				*101 %*				
Sample ID: INK0471-04 (MW-3 - Water)								
Reporting Units: ug/l								
Benzene	EPA 8260B	4K17006	0.50	ND	1	11/17/2004	11/17/2004	
Ethylbenzene	EPA 8260B	4K17006	0.50	ND	1	11/17/2004	11/17/2004	
Toluene	EPA 8260B	4K17006	0.50	ND	1	11/17/2004	11/17/2004	
o-Xylene	EPA 8260B	4K17006	0.50	ND	1	11/17/2004	11/17/2004	
m,p-Xylenes	EPA 8260B	4K17006	1.0	ND	1	11/17/2004	11/17/2004	
Xylenes, Total	EPA 8260B	4K17006	1.0	ND	1	11/17/2004	11/17/2004	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K17006	5.0	ND	1	11/17/2004	11/17/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K17006	5.0	ND	1	11/17/2004	11/17/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K17006	5.0	ND	1	11/17/2004	11/17/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K17006	5.0	ND	1	11/17/2004	11/17/2004	
tert-Butanol (TBA)	EPA 8260B	4K17006	10	ND	1	11/17/2004	11/17/2004	
Ethanol	EPA 8260B	4K17006	150	ND	1	11/17/2004	11/17/2004	
Surrogate: Dibromofluoromethane (80-120%)				*99 %*				
Surrogate: Toluene-d8 (80-120%)				*103 %*				
Surrogate: 4-Bromofluorobenzene (80-120%)				*99 %*				

Del Mar Analytical, Irvine
Pat Abe
Project Manager

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Delta Env. Consultants - Aliso Viejo
271 41 Aliso Creek Road, Suite 270
Aliso Viejo, CA 92656
Attention: Bryan Van Wagner

Project ID: ARCO 3023, Anaheim

Report Number: INK0471

Sampled: 11/05/04
Received: 11/05/04

BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK0471-05 (TB - Water)								
Reporting Units: ug/l								
Benzene	EPA 8260B	4K17006	0.50	ND	1	11/17/2004	11/17/2004	
Ethylbenzene	EPA 8260B	4K17006	0.50	ND	1	11/17/2004	11/17/2004	
Toluene	EPA 8260B	4K17006	0.50	ND	1	11/17/2004	11/17/2004	
o-Xylene	EPA 8260B	4K17006	0.50	ND	1	11/17/2004	11/17/2004	
m,p-Xylenes	EPA 8260B	4K17006	1.0	ND	1	11/17/2004	11/17/2004	
Xylenes, Total	EPA 8260B	4K17006	1.0	ND	1	11/17/2004	11/17/2004	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K17006	5.0	ND	1	11/17/2004	11/17/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K17006	5.0	ND	1	11/17/2004	11/17/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K17006	5.0	ND	1	11/17/2004	11/17/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K17006	5.0	ND	1	11/17/2004	11/17/2004	
tert-Butanol (TBA)	EPA 8260B	4K17006	10	ND	1	11/17/2004	11/17/2004	
Ethanol	EPA 8260B	4K17006	150	ND	1	11/17/2004	11/17/2004	
Surrogate: Dibromofluoromethane (80-120%)				*102 %*				
Surrogate: Toluene-d8 (80-120%)				*104 %*				
Surrogate: 4-Bromofluorobenzene (80-120%)				*101 %*				

Del Mar Analytical, Irvine
Pat Abe
Project Manager

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Attention: Bryan Van Wagner

Project ID: ARCO 3023, Anaheim

Report Number: INK0471

Sampled: 11/05/04
Received: 11/05/04

METHOD BLANK/QC DATA

VOLATILE FUEL HYDROCARBONS (EPA 5030/CADHS Mod. 8015)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K12030 Extracted: 11/12/04										
Blank Analyzed: 11/12/04 (4K12030-BLK1)										
Volatile Fuel Hydrocarbons (C6-C12)	ND	50	ug/l							
Surrogate: 4-BFB (FID)	*9.35*		*ug/l*	*10.0*		*94*	*60-135*			
LCS Analyzed: 11/12/04 (4K12030-BS1)										
Volatile Fuel Hydrocarbons (C6-C12)	264	50	ug/l	220		120	70-135			
Surrogate: 4-BFB (FID)	*9.55*		*ug/l*	*10.0*		*96*	*60-135*			
Matrix Spike Analyzed: 11/12/04 (4K12030-MS1)					**Source: INK0562-04**					
Volatile Fuel Hydrocarbons (C6-C12)	243	50	ug/l	220	ND	110	60-135			
Surrogate: 4-BFB (FID)	*8.70*		*ug/l*	*10.0*		*87*	*60-135*			
Matrix Spike Dup Analyzed: 11/12/04 (4K12030-MSD1)					**Source: INK0562-04**					
Volatile Fuel Hydrocarbons (C6-C12)	250	50	ug/l	220	ND	114	60-135	3	20	
Surrogate: 4-BFB (FID)	*9.65*		*ug/l*	*10.0*		*96*	*60-135*			

Del Mar Analytical, Irvine
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Project ID: ARCO 3023, Anaheim

Report Number: INK0471

Sampled: 11/05/04
Received: 11/05/04

METHOD BLANK/QC DATA

BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K17006 Extracted: 11/17/04										
Blank Analyzed: 11/17/04 (4K17006-BLK1)										
Benzene	ND	0.50	ug/l							
Ethylbenzene	ND	0.50	ug/l							
Toluene	ND	0.50	ug/l							
o-Xylene	ND	0.50	ug/l							
m,p-Xylenes	ND	1.0	ug/l							
Xylenes, Total	ND	1.0	ug/l							
Di-isopropyl Ether (DIPE)	ND	5.0	ug/l							
Ethyl tert-Butyl Ether (ETBE)	ND	5.0	ug/l							
tert-Amyl Methyl Ether (TAME)	ND	5.0	ug/l							
Methyl-tert-butyl Ether (MTBE)	ND	5.0	ug/l							
tert-Butanol (TBA)	ND	10	ug/l							
Ethanol	ND	150	ug/l							
Surrogate: Dibromofluoromethane	*24.8*		*ug/l*	*25.0*		*99*	*80-120*			
Surrogate: Toluene-d8	*25.6*		*ug/l*	*25.0*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*24.9*		*ug/l*	*25.0*		*100*	*80-120*			
LCS Analyzed: 11/17/04 (4K17006-BS1)										
Benzene	22.0	0.50	ug/l	25.0		88	70-120			
Ethylbenzene	22.4	0.50	ug/l	25.0		90	80-120			
Toluene	22.7	0.50	ug/l	25.0		91	75-120			
o-Xylene	22.7	0.50	ug/l	25.0		91	75-125			
m,p-Xylenes	45.9	1.0	ug/l	50.0		92	75-120			
Xylenes, Total	68.6	1.0	ug/l	75.0		91	75-125			
Di-isopropyl Ether (DIPE)	23.4	5.0	ug/l	25.0		94	65-135			
Ethyl tert-Butyl Ether (ETBE)	22.6	5.0	ug/l	25.0		90	60-140			
tert-Amyl Methyl Ether (TAME)	23.0	5.0	ug/l	25.0		92	60-140			
Methyl-tert-butyl Ether (MTBE)	21.3	5.0	ug/l	25.0		85	55-145			
tert-Butanol (TBA)	127	10	ug/l	125		102	70-140			
Ethanol	250	150	ug/l	250		100	35-165			
Surrogate: Dibromofluoromethane	*24.9*		*ug/l*	*25.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*26.1*		*ug/l*	*25.0*		*104*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*25.0*		*ug/l*	*25.0*		*100*	*80-120*			

Del Mar Analytical, Irvine
Pat Abe
Project Manager

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Delta Env. Consultants - Aliso Viejo
27141 Aliso Creek Road, Suite 270
Aliso Viejo, CA 92656
Attention: Bryan Van Wagner

Project ID: ARCO 3023, Anaheim

Report Number: INK0471

Sampled: 11/05/04
Received: 11/05/04

METHOD BLANK/QC DATA

BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K17006 Extracted: 11/17/04										
Matrix Spike Analyzed: 11/17/04 (4K17006-MS1)					**Source: INK0471-02**					
Benzene	25.4	0.50	ug/l	25.0	ND	102	70-120			
Ethylbenzene	25.1	0.50	ug/l	25.0	ND	100	70-130			
Toluene	25.7	0.50	ug/l	25.0	ND	103	70-120			
o-Xylene	25.2	0.50	ug/l	25.0	ND	101	65-125			
m,p-Xylenes	51.1	1.0	ug/l	50.0	ND	102	65-130			
Xylenes, Total	76.4	1.0	ug/l	75.0	ND	102	65-135			
Di-isopropyl Ether (DIPE)	27.9	5.0	ug/l	25.0	ND	112	65-140			
Ethyl tert-Butyl Ether (ETBE)	26.6	5.0	ug/l	25.0	ND	106	60-140			
tert-Amyl Methyl Ether (TAME)	26.8	5.0	ug/l	25.0	ND	107	55-145			
Methyl-tert-butyl Ether (MTBE)	25.3	5.0	ug/l	25.0	ND	101	50-155			
tert-Butanol (TBA)	135	10	ug/l	125	ND	108	65-145			
Ethanol	244	150	ug/l	250	ND	98	35-165			
Surrogate: Dibromofluoromethane	*26.2*		*ug/l*	*25.0*		*105*	*80-120*			
Surrogate: Toluene-d8	*26.2*		*ug/l*	*25.0*		*105*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*25.3*		*ug/l*	*25.0*		*101*	*80-120*			
Matrix Spike Dup Analyzed: 11/17/04 (4K17006-MSD1)					**Source: INK0471-02**					
Benzene	25.2	0.50	ug/l	25.0	ND	101	70-120	1	20	
Ethylbenzene	25.2	0.50	ug/l	25.0	ND	101	70-130	0	20	
Toluene	25.6	0.50	ug/l	25.0	ND	102	70-120	0	20	
o-Xylene	25.2	0.50	ug/l	25.0	ND	101	65-125	0	20	
m,p-Xylenes	51.6	1.0	ug/l	50.0	ND	103	65-130	1	25	
Xylenes, Total	76.8	1.0	ug/l	75.0	ND	102	65-135	1	20	
Di-isopropyl Ether (DIPE)	26.9	5.0	ug/l	25.0	ND	108	65-140	4	25	
Ethyl tert-Butyl Ether (ETBE)	26.1	5.0	ug/l	25.0	ND	104	60-140	2	25	
tert-Amyl Methyl Ether (TAME)	26.2	5.0	ug/l	25.0	ND	105	55-145	2	30	
Methyl-tert-butyl Ether (MTBE)	24.7	5.0	ug/l	25.0	ND	99	50-155	2	25	
tert-Butanol (TBA)	135	10	ug/l	125	ND	108	65-145	0	25	
Ethanol	244	150	ug/l	250	ND	98	35-165	0	30	
Surrogate: Dibromofluoromethane	*25.4*		*ug/l*	*25.0*		*102*	*80-120*			
Surrogate: Toluene-d8	*26.2*		*ug/l*	*25.0*		*105*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*25.6*		*ug/l*	*25.0*		*102*	*80-120*			

Del Mar Analytical, Irvine
Pat Abe
Project Manager

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DeltaEnv. Consultants - Aliso Viejo
271 41 Aliso Creek Road, Suite 270
Aliso Viejo, CA 92656
Attention: Bryan Van Wagner

Project ID: ARCO 3023, Anaheim

Report Number: INK0471

Sampled: 11/05/04
Received: 11/05/04

METHOD BLANK/QC DATA

BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K17011 Extracted: 11/17/04										
Blank Analyzed: 11/17/04 (4K17011-BLK1)										
Benzene	ND	0.50	ug/l							
Ethylbenzene	ND	0.50	ug/l							
Toluene	ND	0.50	ug/l							
o-Xylene	ND	0.50	ug/l							
m,p-Xylenes	ND	1.0	ug/l							
Xylenes, Total	ND	1.0	ug/l							
Di-isopropyl Ether (DIPE)	ND	5.0	ug/l							
Ethyl tert-Butyl Ether (ETBE)	ND	5.0	ug/l							
tert-Amyl Methyl Ether (TAME)	ND	5.0	ug/l							
Methyl-tert-butyl Ether (MTBE)	ND	5.0	ug/l							
tert-Butanol (TBA)	ND	10	ug/l							
Ethanol	ND	150	ug/l							
Surrogate: Dibromofluoromethane	*26.6*		*ug/l*	*25.0*		*106*	*80-120*			
Surrogate: Toluene-d8	*26.2*		*ug/l*	*25.0*		*105*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*23.6*		*ug/l*	*25.0*		*94*	*80-120*			
LCS Analyzed: 11/17/04 (4K17011-BS1)										
Benzene	27.2	0.50	ug/l	25.0		109	70-120			
Ethylbenzene	27.5	0.50	ug/l	25.0		110	80-120			
Toluene	27.1	0.50	ug/l	25.0		108	75-120			
o-Xylene	25.8	0.50	ug/l	25.0		103	75-125			
m,p-Xylenes	53.7	1.0	ug/l	50.0		107	75-120			
Xylenes, Total	79.5	1.0	ug/l	75.0		106	75-125			
Di-isopropyl Ether (DIPE)	26.0	5.0	ug/l	25.0		104	65-135			
Ethyl tert-Butyl Ether (ETBE)	24.8	5.0	ug/l	25.0		99	60-140			
tert-Amyl Methyl Ether (TAME)	24.0	5.0	ug/l	25.0		96	60-140			
Methyl-tert-butyl Ether (MTBE)	23.8	5.0	ug/l	25.0		95	55-145			
tert-Butanol (TBA)	172	10	ug/l	125		138	70-140			
Ethanol	506	150	ug/l	250		202	35-165			*LP*
Surrogate: Dibromofluoromethane	*26.2*		*ug/l*	*25.0*		*105*	*80-120*			
Surrogate: Toluene-d8	*26.5*		*ug/l*	*25.0*		*106*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*24.2*		*ug/l*	*25.0*		*97*	*80-120*			

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Delta Env. Consultants - Aliso Viejo
27141 Aliso Creek Road, Suite 270
Aliso Viejo, CA 92656
Attention: Bryan Van Wagner

Project ID: ARCO 3023, Anaheim

Report Number: INK0471

Sampled: 11/05/04
Received: 11/05/04

METHOD BLANK/QC DATA

BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K17011 Extracted: 11/17/04										
Matrix Spike Analyzed: 11/17/04 (4K17011-MS1)					**Source: INK0476-06**					
Benzene	25.8	0.50	ug/l	25.0	ND	103	70-120			
Ethylbenzene	26.5	0.50	ug/l	25.0	ND	106	70-130			
Toluene	25.5	0.50	ug/l	25.0	ND	102	70-120			
o-Xylene	24.6	0.50	ug/l	25.0	ND	98	65-125			
m,p-Xylenes	51.0	1.0	ug/l	50.0	ND	102	65-130			
Xylenes, Total	75.6	1.0	ug/l	75.0	ND	101	65-135			
Di-isopropyl Ether (DIPE)	25.0	5.0	ug/l	25.0	ND	100	65-140			
Ethyl tert-Butyl Ether (ETBE)	23.6	5.0	ug/l	25.0	ND	94	60-140			
tert-Amyl Methyl Ether (TAME)	22.6	5.0	ug/l	25.0	ND	90	55-145			
Methyl-tert-butyl Ether (MTBE)	22.4	5.0	ug/l	25.0	ND	90	50-155			
tert-Butanol (TBA)	166	10	ug/l	125	ND	133	65-145			
Ethanol	542	150	ug/l	250	ND	217	35-165			*LM*
Surrogate: Dibromofluoromethane	*26.8*		*ug/l*	*25.0*		*107*	*80-120*			
Surrogate: Toluene-d8	*26.1*		*ug/l*	*25.0*		*104*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*24.7*		*ug/l*	*25.0*		*99*	*80-120*			
Matrix Spike Dup Analyzed: 11/17/04 (4K17011-MSD1)					**Source: INK0476-06**					
Benzene	25.7	0.50	ug/l	25.0	ND	103	70-120	0	20	
Ethylbenzene	26.5	0.50	ug/l	25.0	ND	106	70-130	0	20	
Toluene	25.9	0.50	ug/l	25.0	ND	104	70-120	2	20	
o-Xylene	24.6	0.50	ug/l	25.0	ND	98	65-125	0	20	
m,p-Xylenes	50.7	1.0	ug/l	50.0	ND	101	65-130	1	25	
Xylenes, Total	75.2	1.0	ug/l	75.0	ND	100	65-135	1	20	
Di-isopropyl Ether (DIPE)	24.5	5.0	ug/l	25.0	ND	98	65-140	2	25	
Ethyl tert-Butyl Ether (ETBE)	23.0	5.0	ug/l	25.0	ND	92	60-140	3	25	
tert-Amyl Methyl Ether (TAME)	22.0	5.0	ug/l	25.0	ND	88	55-145	3	30	
Methyl-tert-butyl Ether (MTBE)	21.8	5.0	ug/l	25.0	ND	87	50-155	3	25	
tert-Butanol (TBA)	169	10	ug/l	125	ND	135	65-145	2	25	
Ethanol	575	150	ug/l	250	ND	230	35-165	6	30	*LM*
Surrogate: Dibromofluoromethane	*26.7*		*ug/l*	*25.0*		*107*	*80-120*			
Surrogate: Toluene-d8	*26.4*		*ug/l*	*25.0*		*106*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*24.6*		*ug/l*	*25.0*		*98*	*80-120*			

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Pat Abe
Project Manager

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Delta Env. Consultants - Aliso Viejo
27141 Aliso Creek Road, Suite 270
Aliso Viejo, CA 92656
Attention: Bryan Van Wagner

Project ID: ARCO 3023, Anaheim

Report Number: INK0471

Sampled: 11/05/04
Received: 11/05/04

DATA QUALIFIERS AND DEFINITIONS

IB,IA	CCV recovery above limit; analyte not detected,Results are valid even though CCV recovery outside of limits
LM	The MS and/or MSD were above the acceptance limits. See Blank Spike (LCS).
LP	Laboratory Control Sample recovery was above method control limits. Analyte not detected, data not impacted.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

ADDITIONAL COMMENTS

For 8260 analyses:

Due to the high water solubility of alcohols and ketones, the calibration criteria for these compounds is <30% RSD. The average % RSD of all compounds in the calibration is 15%, in accordance with EPA methods.

For Volatile Fuel Hydrocarbons (C6-C12):

Volatile Fuel Hydrocarbons (C6-C12) are quantitated against a gasoline standard.

8015 Analysis EDF Parlabel Cross Reference

Analyte	EDF Parlabel
Volatile Fuel Hydrocarbons (C6-C12)	GROC6C12

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Sampled: 11/05/04
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Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	NELAP	CA
EPA 8015 Mod.	Water	X	X
EPA 8260B	Water	X	X

NV and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com.

Del Mar Analytical, Irvine
Pat Abe
Project Manager

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Chain of Custody Record

127033

Project Name ARCO 3023
BP BU/GEM CO Portfolio: Orange - ARCO
BP Laboratory Contract Number: 461000
Requested Due Date (mm/dd/yy) 10 days

On-site Time:	Temp:
Off- site Time:	Temp:
Sky Conditions:	
Meteorological Events:	
Wind Speed:	Direction:

Send To:	BP/GEM Facility No.: 3023	Consultant/Contractor: Delta
Lab Name: Del Mar	BP/GEM Facility Address: 601 S. Magnolia Ave	Address: 27141 Aliso Creek Rd. #270
Lab Address: Irvine	Site ID No. Anaheim, CA	
	Site Lat/Long:	e-mail EDD:
	California Global ID #:	Consultant/Contractor Project No.: 00-826
Lab PM: Pat Abe	BP/GEM PM Contact: D. Fah	Consultant/Contractor Tele/Fax: (949) 362-3077
Tele/Fax:	Address:	Consultant/Contractor PM: B. VanWagner
Report Type & QC Level:		Invoice to: Consultant or BP or Atlantic Richfield Co (Circle one)
BP/GEM Account No.:	Tele/Fax:	BP/GEM Work Release No:

Lab Bottle Order No: INK0471

Item No.	Sample Description	Time	Date	Matrix: Soil/Solid	Matrix: Water/Liquid	Matrix: Air	Laboratory No.	No. of containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	Ice	Requested Analysis: BTEX 8021	~~BTEX~~/TPH Gas	EPA 8260 (Water Only)	EPA 8270	Sample Point Lat/Long and Comments
1	MW-4	0758	11/5		X			5				X	X		X	X		
2	MW-1	0820	↓		↓			↓				↓	↓		↓	↓		
3	MW-2	0822																
4	MW-3	0824																
5	TB																	
6																		
7																		
8																		
9																		
10																		

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: Juan Velasquez						
Sampler's Company: Doulos	Doulos	11/5/03	0925		11.5.03	9:25
Shipment Date:						
Shipment Method:						
Shipment Tracking No:						

Special Instructions: ENF05-G09K3-0115-4

Custody Seals In Place Yes ___ No X Cooler Temperature on Receipt 3 °F/C Trip Blank Yes X No ___

LABORATORY